UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 August 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>22 August 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>15 December 2008</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 1, 11, 13, 17 are objected to because of the following informalities: the use of parentheses in the claim language is not allowed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 10, 11, 13, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 10, 13, and 17 the ranges for parameters Nc and Nm are not defined rendering the claim indefinite.

Regarding claim 11 ranges for parameters Mc and Mm are not defined rendering the claim indefinite.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.   Claim 13 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent[1] and recent Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites a series of steps or acts to be performed, the claim neither transforms underlying subject matter nor is positively tied to another statutory category that accomplishes the claimed method steps, and therefore does not qualify as a statutory process. For example the **generating modified image data** method including steps of selecting and generating is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. **The Applicant has provided no explicit and deliberate definitions of "selecting" or " generating " to limit the steps to the electronic form of the "generating modified image data method" and the claim language itself is sufficiently broad to read on a human operator being shown a printout of image data, mentally stepping through the steps of the method, and writing out the modified image data.**

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[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).
[2] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

6.   Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. A computer-readable medium recited in the

claim is disclosed as a carrier wave in the Specification (see p. 37, lines 9 and 13), and

a carrier wave is non-statutory.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claim(s) 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kubo et al. (U.S. Patent Pub. No. 2003/0095269 A1) in view of Shimada (U.S. Patent

Pub. No. 2005/0219618 A1).

       Regarding claim 1 Kubo discloses an image processing device comprising a

parameter candidate storage portion that stores a plurality of modification candidate

parameters for modifying colors of pixels in image data, the plurality of modification

candidate parameters corresponding to mutually differing modifications; a user

interface portion that allows a user to select parameters from among the plurality of

modification candidate parameters (see Fig. 5 and 7) wherein a functioning graphical

user interface (GUI) inherently utilizes storage for the user-modifiable parameters; and

an image converting portion that generates modified image data according to the

selected parameter from subject image data that is subject for modification of color

tones in image (see Fig. 2), wherein the modified image data is different from the

subject image data in colors of at least part of pixels; wherein the plurality of

modification candidate parameters includes: Nc, where Nc is a positive integer, color

image modification candidate parameters for color image data and Nm, monochrome

image modification candidate parameters for monochrome images; and the user

interface portion allows the user to select a parameter from the Nc color image

modification candidate parameters in case where the subject image data is color image

data; and allows the user to select a parameter from the Nm monochrome image

modification candidate parameters in case where the subject image data is

monochrome image data (see Fig. 7 where Nc and Nm are both equal to four).

However, Kubo is silent on Nm that is larger than Nc. But Shimada teaches an

image processing system with wherein Nm is an integer that is larger than Nc (see Fig.

15, par. 0119 – 0122). Therefore it would be obvious to one of ordinary skill in the art at

the time the invention was made to modify the device disclosed by Kubo with the

feature of having more monochrome then color parameters taught by Shimada in order

to provide advanced monochrome mode controls for expert users.

Regarding claim 13, it is rejected on the same grounds as claim 1.

Regarding claim 17, it is rejected on the same grounds as claim 1. In addition Kubo discloses a printer driver which is a computer program (see par. 0017).

Regarding claim 2 (dependent on claim 1) Kubo discloses an image processing device wherein the plurality of modification candidate parameters are parameters that express characteristics of tone conversion (see Fig. 9).

Regarding claim 3 (dependent on claim 1) Kubo discloses an image processing device comprising a conversion curve preparing portion that prepares according to the selected parameter a conversion curve for producing modification of colors of pixels, the conversion curve providing output tone values corresponding to input tone values (see Fig. 7), when the subject image data is monochrome image data, the user interface portion provides a partial adjustment input screen for modifying a second part of the conversion curve without modifying a first part of the conversion curve, the first part being a part in which the input tone values are within a specific range, the image processing device further comprises a conversion curve modifying portion that modifies the second part of the conversion curve according to user instructions through the partial adjustment input screen (see Fig. 6, set by the sliders), and the image converting portion produces tone values for pixels of the modified image data by modifying tone values of pixels of the subject image data based on the conversion curve (see Fig. 2).

Regarding claim 4 (dependent on claim 3) Kubo discloses an image processing device wherein the second part is a part corresponding to an area of the input tone values, the area being included in a range of up to top 40% of scope of the input tone values. I.e. the second part of the curve can be set at top 40% of input by using the sliders (see Fig. 6).

Regarding claim 5 (dependent on claim 3) Kubo discloses an image processing device wherein the second part is a part corresponding to an area of the input tone values, the area being included in a range of up to bottom 25% of scope of the input tone values. I.e. the second part of the curve can be set at bottom 25% of input by using the sliders (see Fig. 6).

Regarding claim 6 (dependent on claim 4 or 5) Kubo discloses an image processing device wherein the conversion curve modifying portion modifies the conversion curve so that change in the output tone value of the conversion curve is within a range of +/-10 when expressed as the "L*" in an "L*a*b*" color coordinate system. I.e. the change in the output for the curve can be set at 10 units in a "Lab" coordinate system (see Fig. 6).

Regarding claim 7 (dependent on claim 4 or 5) Kubo discloses an image processing device comprising a medium type input portion that receives information about a type of print medium for printing image of the subject image data (see Mode

options, Fig. 4); and a modification range determining portion that determines according
to the information about the type of the print medium an allowable range of
modifications of the output tone values of the conversion curve by the conversion curve
modifying portion; wherein the conversion curve modifying portion modifies the
conversion curve so that sizes of the changes in the output tone values of the
conversion curve are within the allowable range, i.e. sliders (see Fig. 6) are set in the
allowable range.

Regarding claim 8 (dependent on claim 3) Kubo discloses an image processing
device wherein the conversion curve modifying portion modifies the second part of the
conversion curve so that a highest value in scope of the input tone values is converted
into a lower value than a highest value in scope of the output tone values, i.e. sliders
(see Fig. 6) can be set in said manner.

Regarding claim 9 (dependent on claim 3) Kubo discloses an image processing
device wherein the conversion curve modifying portion modifies the second part of the
conversion curve so that a lowest value of in scope of the input tone values is converted
into a higher value than a lowest value in scope of the output tone values, i.e. sliders
(see Fig. 6) can be set in said manner.

Regarding claim 10 (dependent on claim 3) Kubo discloses an image processing
device wherein the monochrome image data is image data in which brightness of each

pixel is expressed by a tone value, the image processing device comprises a conversion table generating portion that generates a monochrome image conversion table according to the conversion curve when the subject image is monochrome image data; the monochrome image conversion table is a conversion table for converting the monochrome image data into image data expressed by tone values in a specific first color coordinate system, wherein conversion with the monochrome image conversion table converts at least a part of achromatic colors expressed by tone values into colors with different brightness; and the image converting portion converts the subject image data into the modified image data based on the monochrome image conversion table when the subject image data is monochrome image data (see par. 0103 - 0111, tables (LUT's)).

Regarding claim 11 (dependent on claim 3) Kubo discloses an image processing device wherein the color image data is image data in which color of each pixel is expressed by tone values in a second color coordinate system, the conversion table generating portion generates a color image conversion table according to the conversion curve when the subject image data is color image data; the color image conversion table is a conversion table for converting the color image data into image data expressed by tone values in a third color coordinate system that is different from the second color coordinate system, wherein conversion with the color image conversion table modifies at least part of colors expressed by the tone values in the second color coordinate system into other colors; the converting portion converts the subject image data into the modified image data based on the color image conversion

table when the subject image data is color image data; the third color coordinate system

is a color coordinate system in which tone values can be any of Mc, where Mc is a

positive integer, mutually differing values; and the first color coordinate system is a color

coordinate system in which tone value can be any of Mm, where Mm is an integer larger

than Mc, mutually differing values. I.e. color coordinates conversion is implemented

using matrices 1-3 (see Fig. 2, par. 0103 - 0111).

        Regarding claim 12 (dependent on claim 3) Kubo discloses an image processing

device wherein the monochrome image conversion table is a conversion table that

includes a part in which, when colors are expressed in a "L*a*b*" color coordinate

system, the "L*" value of a color that is modified according to the conversion curve is

incremented linearly relative to increments in the input tone value that expresses color

prior to modification. I.e. matrices 1-3 (see Fig. 2, par. 0103 - 0111) define linear color

coordinates transformation, and the L*a*b coordinate system is well known in the art.

        Regarding claim 14 (dependent on claim 13) Kubo discloses an image

processing device comprising: (c) preparing according to the selected parameter a

conversion curve for producing modification of colors of pixels, the conversion curve

providing output tone values corresponding to input tone values, the step (a) further

includes providing to a user a partial adjustment input screen for modifying a second

part of the conversion curve without modifying a first part of the conversion curve, when

the subject image data is monochrome image data, the first part being a part in which

the input tone values are within a specific range, the method further comprising (d) modifying the second part of the conversion curve according to user instructions through the partial adjustment input screen, and the step (b) includes producing tone values for pixels of the modified image data by modifying tone values of pixels of the subject image data based on the conversion curve (See figs. 7, 6 and 2).

Regarding claim 15 (dependent on claim 14) Kubo discloses an image processing device wherein the step (d) includes modifying the second part of the conversion curve so that a highest value in scope of the input tone values is converted into a lower value than a highest value in scope of the output tone values (see Fig. 6)

Regarding claim 16 (dependent on claim 14) Kubo discloses an image processing device, wherein the step (d) includes modifying the second part of the conversion curve so that a lowest value of in scope of the input tone values is converted into a higher value than a lowest value in scope of the output tone values. (See Fig. 6).

Regarding claim 18 (dependent on claim 17), it is rejected on the same grounds as claim 14.

Regarding claim 19 (dependent on claim 17), it is rejected on the same grounds as claim 15.

Regarding claim 20 (dependent on claim 17), it is rejected on the same grounds as claim 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Oleg Roytburd whose telephone number is 571-270-7305. The examiner can normally be reached on Monday - Friday 10:00 - 18:00 EST, alternative Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Tieu can be reached on 571-272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benny Q Tieu/   OR
Supervisory Patent Examiner, Art Unit 2625   Examiner
                                                   Art Unit 2625